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SUMMARY

Following a 9-year buildup in feed grain stocks, the 1961 Feed Grain Program was enacted by Congress to enable farmers to maintain their incomes while reducing production of corn and grain sorghums. The program offered farmers incentive payments to divert at least 20 percent of their corn and grain sorghum acreage to conservation uses. It also offered them support prices on their normal yield on the reduced acreage at a national average price of \$1.20 a bushel for corn and \$1.93 a hundredweight for grain sorghum.

About 1,200 farmers in 8 areas were selected for study. The sample in each area included about 75 participants in the 1961 Feed Grain Program and 75 nonparticipants selected at random from the records in the county offices of Agricultural Stabilization and Conservation Service. In personal interviews with these farmers, information was obtained on size of farms, acreages of cropland and land in corn and grain sorghum, productivity of the land, personal characteristics of the operators and their families, and other factors that were presumed to have some bearing on participation in the program.

In the areas studied, participation in the program ranged from 39 percent of the farms in west-central Ohio to 81 percent in southwestern Kansas.

Participation in the program was highest among the large farms that were cropped most intensively. Farms of participants were larger than those of nonparticipants in all areas; in west-central Ohio they were 45 percent larger. Participants had a larger proportion of their land in crops and prior to the feed grain program more of the cropland was used for such high value crops as corn, grain sorghum, soybeans, and wheat. The number of livestock raised per farm for the eight areas averaged as high or higher on the nonparticipants' farms compared with those of participants. Thus, with less cropland and more livestock nonparticipants had a much higher ratio of livestock to land and therefore were much less dependent on the sales of cash crops. Tenure of the operator appeared to have little effect on participation.

Compared with nonparticipants, participants were younger, had occupied their 1961 farms for a shorter period of years, and more of them had off-farm incomes. There was little difference in the amount of family labor available or in the sources of off-farm

incomes, although a slightly larger proportion of the nonparticipants had incomes from pensions, Social Security, and similar sources.

Participation in the Soil Bank, the Agricultural Conservation Program, and other farm programs was closely correlated with participation in the feed grain program. However, it is not clear from the study whether farmers participated or not because of personal likes or dislikes for Government programs, or because the programs, which were all of a similar nature, fitted some farms better than they did others.

There was little difference in the "productivity index" of participating and nonparticipating farms in the Corn Belt. In the Southern Plains area, productivity indexes were higher on farms of participants, but they were not higher relative to yields obtained in 1961.

Participants' estimates of cash costs per acre for producing corn and grain sorghum were higher than similar estimates made by nonparticipants. The data are not conclusive, but they indicate that farmers who thought they were high-cost producers were more likely to participate in the feed grain program.

Participants in the program tended to keep their better land in production. A comparison of normal yields for 1960 and 1961 indicates that 1961 yields on participants' farms probably were 2 to 4 percent higher than they would have been without the program.

Because of the reduced acreages of feed grains in 1961, the total quantity of fertilizer applied on these crops was less in 1961 than in 1960. Nonparticipants, however, maintained their acreages of feed grains and, continuing the trend of recent years, used more fertilizer in 1961 than a year earlier. The percentage of the acreage fertilized rose sharply especially in Iowa where less than half the corn was fertilized in 1960, and in Texas where about 10 percent of the grain sorghum was fertilized in 1960 and more water was available to apply to fewer fertilized acres in 1961. The amount of plant food applied per fertilized acre in 1961 was higher in most areas than in 1960. The increase was about the same for participants and nonparticipants.

The reasons given most frequently by farmers for participating in the feed grain program were in one or more of five classes: Because it was more profitable, to improve the land, to help reduce the surplus of feed grains, to reduce risk, or to reduce costs. Although these reasons were stated in a

variety of ways, basically farmers participated because (1) they thought participation would be more profitable for the operators or landlords in 1961, or (2) they thought participation would help to reduce the surplus of feed grains.

Reasons given for not participating in the program were even more difficult to summarize. But generally they fell into four categories: Nonparticipants thought their 1961 incomes would be higher if they stayed out of the program; nonparticipants were opposed to all Government programs; nonparticipants didn't understand the program, or thought, rightly or wrongly, that they were not treated fairly in the administration of the program.

Both participants and nonparticipants agreed that some of the advantages of the program were: That it reduced surpluses, that it helped to improve or conserve the soil, and that it supported the prices of feed grains and livestock. A large proportion of the farmers surveyed, even among participants, said the program offered no advan-

tages. A third of the participants and about three-fifths of the nonparticipants in southwestern Kansas said they saw no advantage in the program.

The disadvantages of the program, as farmers saw them, were difficult to summarize, but generally farmers in all the areas agreed that the program was less advantageous to livestock farmers and operators of small farms than to operators of large cash-grain farms. The program was said to be ineffective also because participants tended to farm the reduced acreage more intensively. In the Southern Plains, farmers criticized the program because it caused an increase in acreage fallowed and the attendant problem and cost of controlling soil-blowing on the exposed fields.

Most farmers planned to rotate the fields to be retired from production. Because many of them participated in the feed grain program "to improve the soil," rotation of fields will tend to raise yields in future years.

AN ECONOMIC APPRAISAL OF THE 1961 FEED GRAIN PROGRAM

by

James Vermeer, Agricultural Economist
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INTRODUCTION

For three decades, production of feed grains has tended to expand faster than requirements. On October 1, 1933, just before the Agricultural Adjustment Act was passed, stocks of feed grains were at a record high of slightly more than 15 million tons. With a control program in effect and the droughts of 1934 and 1936, stocks declined. But by 1941 they were at another peak of 23.1 million tons. Much of the surplus was used up during World War II and the immediate postwar years. By 1950, however, stocks reached another peak of 30.5 million tons. With relatively low yields and a small crop in 1951 (the last corn crop of less than 3 billion bushels), with a large pig crop in 1951 and the greatest exports of corn in 30 years in 1952, stocks of feed grain fell to 20 million tons on October 1, 1952. Since then, stocks rose rapidly for 9 years until on October 1, 1961, they stood at nearly 85 million tons. It was against this background that the 1961 Emergency Feed Grain Program was enacted.

As a result of the 1961 Feed Grain Program, the acreage of corn and grain sorghum was reduced 19.6 million acres below that of 1960. Despite the record high yield in 1961, production of these grains was reduced more than 400 million bushels, and carryover stocks of all feed grains were reduced from 84.7 million tons September 30, 1961, to 71 million tons a year later.

The 1961 Feed Grain Program

The 1961 Feed Grain Program was a voluntary program designed to encourage farmers to participate and thus stop the buildup of the feed grain supply that had reached an all-time record high level.

The program offered payments to the producers of corn and grain sorghum for reducing the acreages of these crops, and support prices for feed grains grown on their remaining acreages. National average support prices were \$1.20 a bushel for corn and \$1.93 a hundredweight for grain sorghum grown on the reduced acreage.

A 20-percent reduction of the average acreage grown on the farm in 1959 and 1960 was the minimum requirement for these benefits. Payments for reducing the minimum acreage were equal to 50 percent of the support price for the county times the normal yield of the farm as determined by the County ASCS Committee.¹ Reductions of 20 to 40 percent of the base were paid at 60 percent of the county support rate; reductions of more than 40 percent were paid at the 50-percent rate. Farmers with bases of less than 25 acres could divert their entire acreage for payment. Maximum diversion for payment on farms with 25 to 100 acres was 20 acres plus 20 percent of the base. If the base was greater than 100 acres, the maximum diversion for payment was 40 percent of the base.

Farmers received payments in kind from Commodity Credit Corporation stocks. However, farmers could request ASCS to act as their agent in selling the grain and receive payment through the county office of ASCS.

Land diverted from corn and grain sorghum had to be used for approved soil conserving purposes. Such acreages were to be in addition to existing acreages in soil conserving uses on the farm.

Producers of corn and grain sorghum who did not participate in the program were not eligible for price support on feed grains grown in 1961.

¹ Normal yield for a farm was defined as the 1959-60 county average yield times the ratio of the farm's productivity to the county average.

Purpose of the Study

A study of the 1961 Feed Grain Program was made to determine factors that affected farmers' decisions regarding participation in the feed grain program and to provide information useful in developing and operating future programs. Answers were sought to such questions as how did the farms in the feed grain program differ from other farms; what were the differences between personal characteristics and off-farm incomes of participants and nonparticipants; what adjustments were made in farm organization and operation by farmers in the program in such things as the use of fertilizer and other improved practices and in land selection; did nonparticipants make any changes in their farm organization and operations that might be associated with the feed grain program; what were farmers' reasons for participating or not participating in the feed grain program; and what changes in the program would increase participation or maintain participation at lower cost.

It was not always possible to obtain clear answers to these questions, particularly questions such as those dealing with farmers' reasons for participating or not participating. However, the data provide definitive answers to most of these questions.

Method of Study

Data and information for the study were obtained during the winter of 1961-62 by interviewing samples of farmers in selected States. The locations of the farms included in the study are shown in figure 1. The samples in 8 areas in 5 States included about 1,200 farmers. In each area, the sample included about 75 farmers who participated in the 1961 program and 75 farmers who had not participated. Two areas each were surveyed in Ohio, Minnesota, and Iowa, and one area each in southwestern Kansas and the Southern High Plains of Texas.²

Nearly 1.2 million farms, or 40 percent of the corn and grain sorghum farms in the United States, participated in the 1961 Feed Grain Program. About 25.2 million acres of land were diverted from the production of these grains to soil-conserving uses. The

participating farmers grew 55 percent of the corn and 76 percent of the grain sorghums in 1959-60.

In the areas included in the survey, participation in the 1961 program ranged from 39 percent of all eligible farms in west-central Ohio to 81 percent in southwestern Kansas. In the eight areas, participation was as follows:

<u>Area</u>	<u>Percentage of eligible farms participating</u>
West-central Ohio	39
Northern Ohio.....	46
Southeastern Minnesota ...	51
Southwestern Minnesota...	62
North-central Iowa	77
Southern Iowa	55
Southwestern Kansas.....	81
Southern High Plains, Texas.....	74

In order to obtain a representative sample of nonparticipants, counties in which less than 15-20 percent of the farmers were nonparticipants generally were excluded from the sample. However, participation in the areas included in the survey was as high or higher than the average of the States in which they are located.

ORGANIZATION OF FARMS

The farms that were most likely to participate in the 1961 Feed Grain Program were the large, intensively cropped farms. Analysis further indicates that farmers generally based their decisions regarding participation on how the program applied to their particular farms. Some of the differences in organization of farms in 1960 and the changes made from 1960 to 1961 also reflect possible differences in farmers' abilities to adjust to new and more profitable situations.

Size of Farm

The farms operated by participants in the 1961 Feed Grain Program were, on the average, larger than those of nonparticipants. In the Southern High Plains and in southern Iowa, farms of participants averaged only 1 percent larger than those of nonparticipants, but in southwestern Minnesota they were 29 percent larger, and in north-central Iowa

² In southwestern Minnesota, the sample included 108 participants and 46 nonparticipants who were cooperating with the Minnesota Agricultural Experiment Station in another study.

AREAS IN THE STUDY

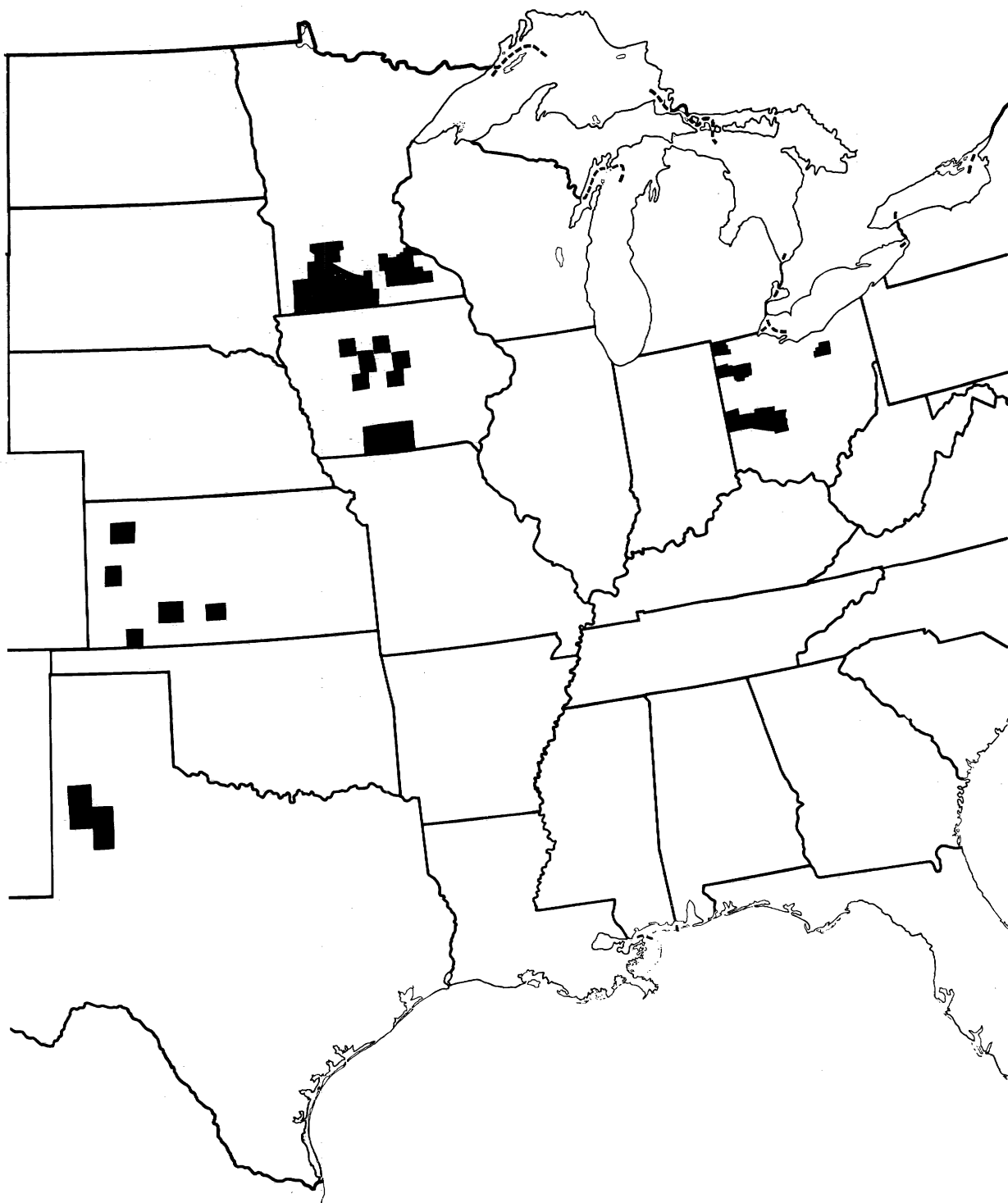


Figure 1

and west-central Ohio they were 34 percent and 45 percent larger, respectively (table 1).

Farms of participants generally had a larger proportion of the land in crops than farms of nonparticipants, and their feed grain bases comprised a larger proportion of total cropland. In the Corn Belt, these differences were small, but in the grain-sorghum areas, differences were relatively large. Thus, in the Corn Belt the difference between participants and nonparticipants in size of farms was more important, but in

the grain-sorghum areas differences in the proportion of land in crops and the size of the feed grain bases relative to total cropland were more significant.

Tenure

The effect of kind of tenure on participation in the feed grain program is not clear, but some of the indications point toward higher participation among tenant-operated farms. In four of the eight areas studied,

TABLE 1.--Size of farm, acres of cropland, and feed grain base, sample farms, 1961

Area	Land owned	Land rented	Total land operated	Cropland		Feed grain base	
				Total	Percent-age of land operated	Total	Percent-age of crop-land
	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Percent</u>	<u>Acres</u>	<u>Percent</u>
West-central Ohio:							
Participants.....	107	119	226	178	79	69	39
Nonparticipants.....	68	88	156	121	78	41	34
Northern Ohio:							
Participants.....	90	154	244	199	81	58	29
Nonparticipants.....	87	132	219	182	83	49	27
Southeastern Minnesota:							
Participants.....	165	82	247	201	81	79	39
Nonparticipants.....	110	65	175	140	80	53	38
Southwestern Minnesota:							
Participants.....	110	155	265	225	85	115	51
Nonparticipants.....	95	111	206	172	83	87	51
North-central Iowa:							
Participants.....	44	218	262	232	89	119	51
Nonparticipants.....	91	104	195	170	87	92	54
Southern Iowa:							
Participants.....	151	135	286	187	65	71	38
Nonparticipants.....	151	133	284	178	63	54	30
Southwestern Kansas:							
Participants.....	408	633	1,041	766	74	188	24
Nonparticipants.....	510	470	980	666	68	105	16
Southern High Plains, Texas:							
Participants.....	181	286	467	447	96	218	49
Nonparticipants.....	182	279	461	394	85	145	37

the proportion of land owned by the operators was smaller for farms in the program than for those not in the program. In two areas participants and nonparticipants owned the same proportion of the land operated, and in the other two areas participants owned a larger proportion of the land, as shown in the following tabulation:

Area	Owned land as a percentage of total land in farms of--	
	Participants	Nonparticipants
	<u>Percent</u>	<u>Percent</u>
West-central Ohio.....	47	43
Northern Ohio.....	37	40
Southeastern Minnesota.....	67	63
Southwestern Minnesota.....	42	46
North-central Iowa.....	17	47
Southern Iowa.....	53	53
Southwestern Kansas.....	39	52
Southern High Plains, Texas	39	39

Another measure of the effect of tenure on participation is the proportion of full owners, part owners, and tenants among participants and nonparticipants. Part owners tended to favor the program, and in all areas the percentage of part owners among participants was as large or larger than among nonparticipants (table 2). Also, landlords of the rented part of some of the farms favored participation. The reasons given by some farmers for participation included the statement that their landlords wanted them to participate. In six of the eight areas studied, the proportion of full owners was smaller among participants than among nonparticipants. In only half the areas, however, did the percentage of tenants among participants exceed the percentage among nonparticipants.

Most of the rented farmland in these areas was rented from persons living in the county in which the farm was located or in an adjoining county. Rented land on farms of nonparticipants was more likely to be rented from local individuals, and rented land on farms of participants was more likely to be rented from absentee or institutional landlords.

Among operators of rented land, crop-share leases were more commonly used by participants than nonparticipants. In fact, a majority of all leases were of this type in all areas except southeastern Minnesota.

Less than 1 percent of operators of rented land in the program reported any change in leases from 1960 to 1961. Participation in the feed grain program tended to reduce variable costs more than fixed costs. As these variable costs usually fall more heavily on tenants than on landlords, participation was advantageous to tenants. Participation was also advantageous to the landlords on crop-share leases. It provided an assured income from part of the land and assured the support price for their share of the production of corn or grain sorghum. There was no indication, however, that terms of the leases were changed to equalize the benefits of the program. Some land rented by new operators in 1961 may have been leased on less favorable terms than those obtained by operators in 1960, but the study did not cover this source of possible changes in leases. Also, the program was announced after most leases for 1961 were consummated.

Use of Cropland

In 1960, program participants in the Corn Belt used a larger proportion of their cropland for such high value crops as corn and soybeans than did nonparticipants (table 3). In southern Iowa, participants used 45 percent of their cropland for those two crops compared with only 34 percent on farms of nonparticipants. This was the greatest difference in the areas studied. In southwestern Minnesota the difference was only 2 percentage points and probably was not statistically significant.

In the Southern Plains areas, participants had a larger proportion of their land in sorghum; nonparticipants had more of their land in wheat or cotton, or in the Conservation Reserve. Farmers with smaller wheat or cotton bases had larger acreages of sorghum prior to 1961, and thus their incomes were more dependent on the price support aspects of the feed grain program.

From 1960 to 1961, participants reduced their acreages of corn and grain sorghum by more than the acreage for which they received payments under the feed grain program. For example, in west-central Ohio, the acreage of corn was reduced from 40 percent of the cropland in 1960 to 22 percent in 1961, or an 18-percent reduction of the cropland. But the land retired under the feed grain program was only equal to 16 percent of the cropland (table 4).

TABLE 2.--Relationship of tenure of operator, kind of landlord, and method of renting to participation in the 1961 Feed Grain Program, 8 areas

Area	Tenure of operators, 1961			Kind of landlords of rented land				Principal method of renting		
	Full owners	Part owners	Tenants	Individuals		Other		Cash	Crop share	Live-stock share
				Local	Absen-tee	Local	Absen-tee			
	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.
West-central Ohio:										
Participants.....	40	29	31	79	13	5	3	11	74	15
Nonparticipants.....	48	18	34	89	8	3	0	15	66	19
Northern Ohio:										
Participants.....	28	51	21	87	12	0	1	10	90	0
Nonparticipants.....	30	45	25	83	11	3	3	24	75	1
Southeastern Minnesota:										
Participants.....	54	30	16	76	18	4	2	49	39	12
Nonparticipants.....	56	19	25	89	11	0	0	45	41	14
Southwestern Minnesota:										
Participants.....	33	23	44	61	22	6	11	21	78	1
Nonparticipants.....	33	24	43	82	3	12	3	25	68	7
North-central Iowa:										
Participants.....	23	10	67	58	28	11	3	5	81	14
Nonparticipants.....	42	10	48	59	31	5	5	18	69	13
Southern Iowa:										
Participants.....	38	32	30	58	27	13	2	8	86	6
Nonparticipants.....	51	30	19	69	17	14	0	15	61	24
Southwestern Kansas:										
Participants.....	12	47	41	37	40	10	13	0	100	0
Nonparticipants.....	30	48	22	42	44	11	3	7	91	2
Southern High Plains, Texas:										
Participants.....	30	23	47	70	21	5	4	0	98	2
Nonparticipants.....	24	19	57	70	23	5	2	7	93	0

TABLE 3.--Use of cropland on sample farms, 1960

Area	Corn, sorghum	Soybeans	Wheat	Oats, barley	Rotation pasture and hay, and other crops	Fallow, idle, and failure	Conser- vation Reserve
West-central Ohio:	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Participants....	40	15	12	7	26	0	0
Nonparticipants.	36	9	11	8	36	0	0
Northern Ohio:							
Participants....	29	26	14	10	21	0	0
Nonparticipants.	28	19	14	12	27	0	0
Southeastern Minnesota:							
Participants....	44	14	(¹)	14	25	2	1
Nonparticipants.	39	11	(¹)	20	29	1	(²)
Southwestern Minnesota:							
Participants....	50	20	(¹)	12	16	0	2
Nonparticipants.	50	18	(¹)	17	15	0	0
North-central Iowa:							
Participants....	51	21	(¹)	15	13	0	(²)
Nonparticipants.	56	9	(¹)	18	17	0	0
Southern Iowa:							
Participants....	37	8	(¹)	14	37	3	1
Nonparticipants.	28	6	(¹)	12	50	3	(²)
Southwestern Kansas:							
Participants....	26	0	38	4	1	28	3
Nonparticipants.	17	0	43	4	3	32	1
Southern High Plains, Texas:							
Participants....	50	³ 40	1	(²)	3	2	4
Nonparticipants.	37	³ 43	(²)	0	4	6	10

¹ Included with oats and barley.² Less than 0.5 percent.³ Cotton.

TABLE 4.--Use of cropland in 1960 and in 1961 by farmers participating and not participating in the 1961 Feed Grain Program, 8 specified areas

Area	Participants							
	Corn, sor- ghum	Soybeans	Wheat	Other small grains	Rotation pasture and hay, other crops	Fallow, idle, and failure	Conser- vation Reserve	Feed Grain program
	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.
West-central Ohio:								
1960.....	40	15	12	7	26	0	0	0
1961.....	22	17	13	3	29	0	0	16
Northern Ohio:								
1960.....	29	26	14	10	21	0	0	0
1961.....	14	28	16	7	21	0	0	14
Southeastern Minnesota:								
1960.....	44	14	(¹)	14	25	2	1	0
1961.....	25	17	(¹)	14	27	0	1	16
Southwestern Minnesota:								
1960.....	50	20	(¹)	12	16	0	2	0
1961.....	35	24	(¹)	9	15	0	2	15
North-central Iowa:								
1960.....	51	21	(¹)	15	13	0	(²)	0
1961.....	37	26	(¹)	8	14	1	(²)	14
Southern Iowa:								
1960.....	37	8	(¹)	14	37	3	1	0
1961.....	17	12	(¹)	7	42	5	1	16
Southwestern Kansas:								
1960.....	26	0	38	4	1	28	3	0
1961.....	15	0	39	3	2	30	3	8
Southern High Plains, Texas:								
1960.....	50	³ 40	1	(²)	3	2	4	0
1961.....	31	³ 44	1	(²)	3	2	4	15
Nonparticipants								
West-central Ohio:								
1960.....	36	9	11	8	36	0	0	--
1961.....	36	14	11	6	33	0	0	--
Northern Ohio:								
1960.....	28	19	14	12	27	0	0	--
1961.....	28	22	16	10	24	0	0	--
Southeastern Minnesota:								
1960.....	39	11	(¹)	20	29	1	(²)	--
1961.....	39	11	(¹)	20	29	1	0	--
Southwestern Minnesota:								
1960.....	50	20	(¹)	12	16	0	2	--
1961.....	49	20	(¹)	15	15	1	0	--
North-central Iowa:								
1960.....	56	9	(¹)	18	17	0	0	--
1961.....	56	12	(¹)	17	15	0	0	--
Southern Iowa:								
1960.....	28	6	(¹)	12	50	3	(²)	--
1961.....	37	4	(¹)	12	45	1	(²)	--
Southwestern Kansas:								
1960.....	17	0	43	4	3	32	1	--
1961.....	18	0	39	3	4	35	1	--
Southern High Plains, Texas:								
1960.....	37	³ 43	(²)	(²)	4	6	10	--
1961.....	38	³ 44	1	(²)	3	6	8	--

¹ Included with oats and barley.

² Less than 0.5 percent.

³ Cotton.

In the six Corn Belt areas studied, the acreage of soybeans per participating farm rose by nearly 50 percent in southern Iowa, 20 to 25 percent in north-central Iowa and the two areas in Minnesota, and about 10 percent in the two areas in Ohio. At the same time, the acreage in oats on participating farms was reduced about half in the two areas in Iowa and in west-central Ohio. Acreages of oats on participating farms in the other Corn Belt areas also were reduced sharply.

Nonparticipants in the Corn Belt areas made only small changes in the use of cropland from 1960 to 1961. In Ohio and Iowa, some changes were made to more soybeans and less oats, but in Minnesota the distribution of land use in 1961 was about the same as it was in 1960 (table 4). On nonparticipating farms in southwestern Minnesota the acreage of oats increased slightly. South-central Iowa was the only area among the eight studied where nonparticipants had

more of their land in corn or sorghum in 1961 than in 1960.

In the Kansas area nonparticipants had little opportunity for adjustment. Nearly all the land was used for wheat, grain sorghum, or fallow. Wheat acreages were fixed by allotments. Sorghum acreage could have been expanded at the expense of fallow, but there is no evidence that this would have been a profitable change.

Participants in the Texas area used about 90 percent of their cropland for sorghum and cotton in 1960. With the increase in cotton allotments in 1961, these farmers reduced the acreage of sorghums on their farms by more than the acreage diverted under the feed grain program, and they expanded their cotton acreage by nearly 10 percent. The acreage used for sorghum was reduced nearly 40 percent but only about three-fourths of this land went into the Feed Grain program.

TABLE 5.--Livestock raised on sample farms, 1960 and 1961 feeding years
(Year beginning October 1)

Area	Participants		Nonparticipants	
	1960	1961	1960	1961
	<u>Animal units</u>	<u>Animal units</u>	<u>Animal units</u>	<u>Animal units</u>
West-central Ohio.....	72	87	54	48
Northern Ohio.....	27	25	49	57
Southeastern Minnesota.....	58	60	74	74
Southwestern Minnesota.....	77	80	106	114
North-central Iowa.....	104	101	136	136
Southern Iowa.....	69	71	74	84
Southwestern Kansas.....	22	21	43	50
Southern High Plains, Texas..	13	15	8	10

Note: Livestock production was converted to grain-consuming animal units as follows:

<u>Class of livestock</u>	<u>Animal units equivalent</u>
Milk cows, Jan. 1	1.0
Beef cows, Jan. 1.....	.1
Cattle on feed.....	1.0
Lambs on feed.....	.07
Pigs weaned.....	.5
Feeder pigs sold.....	.1
Feeder pigs bought.....	.4
Broilers raised.....	.012
Hens, Jan. 1.....	.044

Nonparticipants in the Texas area used about 80 percent of their cropland for sorghum and cotton in 1960. Nearly 10 percent of the cropland was in the Conservation Reserve program compared with about 4 percent on nonparticipants' farms. Acreages of cotton and sorghum each rose nearly 2 percent from 1960 to 1961.

In the Southern High Plains, the proportion of the acreage irrigated also was larger on the participating farms than on others. About 48 percent of the cropland on participants' farms was irrigated in 1960 compared with 33 percent of the acreage on farms of nonparticipants. In 1961, the acreage of irrigated cotton on participants' farms rose about 10 percent, but the acreage of irrigated sorghum dropped proportionately more than that of nonirrigated sorghum. More rainfall in the 1961 growing season reduced the need for irrigating. The acreage of irrigated crops on nonparticipating farms also declined slightly in 1961, as shown in the following tabulation:

Irrigated crop	Percentage of cropland on farms of--			
	Participants		Nonparticipants	
	1960	1961	1960	1961
	Pct.	Pct.	Pct.	Pct.
Irrigated sorghum..	21	12	10	10
Irrigated cotton...	27	30	23	21
Total.....	48	42	33	31

In most of the areas, nonparticipants used more of their cropland for hay and pasture and had more livestock than did participants. The exceptions were that participants in southwestern Minnesota had a larger proportion of cropland in hay and pasture and those in west-central Ohio had more livestock. But the surveys do not show whether the smaller acreage of high-value crops and larger acreage of pasture and hay were necessary because of the soil and topography of the farms, or because the operators did not wish to farm more intensively.

In 1961 participants generally used more of their cropland for pasture and hay than in 1960, whereas nonparticipants did just the opposite--they reduced the acreage of hay and pasture in 1961 compared with 1960.

Livestock

Livestock production generally was greater on farms that did not cooperate in the 1961 Feed Grain Program. In six of the eight areas, nonparticipants raised from 7 percent to 95 percent more livestock in 1960 than did participants (table 5). The smallest difference was among farms in southern Iowa; the greatest differences occurred in northern Ohio and southwestern Kansas. Only participants in west-central Ohio and the High Plains of Texas raised more livestock than nonparticipants. Participants in west-central Ohio included several farm operators with large hog or dairy enterprises. Livestock production was an insignificant enterprise on most of the farms in the Texas area; less than half of these farms had livestock.

In most areas, nonparticipants planned to produce more livestock in the 1961-62 feeding year than they did in 1960-61, but the participants were about equally divided between those who planned small increases and those who planned small decreases. Apparently, the feed grain program had some effect in retarding the increase in livestock production by those who participated in the program.

Hired Labor

The proportion of farmers hiring labor generally was greater among participants than among nonparticipants, but average expenditures for hired labor did not differ significantly between the two groups (table 6). In some areas, participants spent more for hired labor, but in other areas the reverse was true. In the Texas area, participation was greater among irrigation farmers, particularly those with a good water supply. More irrigation accounted for part of the greater expense for hired labor.

Only small changes occurred from 1960 to 1961 in the proportion of participants hiring labor or the amount spent by them for labor. In all areas except southern Iowa the proportion of participants hiring labor was slightly greater in 1961 than in 1960. In four areas (southeastern Minnesota, north-central Iowa, southern Iowa, and southwestern Kansas) average expenditures for hired labor also were higher in 1961 than in 1960.

TABLE 6.--Expenditures for hired labor, sample farms, 1960 and 1961

Area	Participants			
	1960		1961	
	Farms reporting	Expenditure per farm reporting	Farms reporting	Expenditure per farm reporting
	<u>Percent</u>	<u>Dollars</u>	<u>Percent</u>	<u>Dollars</u>
West-central Ohio.....	62	1,607	67	1,477
Northern Ohio.....	54	1,017	56	956
Southeastern Minnesota.....	66	364	68	433
Southwestern Minnesota.....	58	551	62	462
North-central Iowa.....	79	447	84	523
Southern Iowa.....	62	473	59	480
Southwestern Kansas.....	66	710	68	745
Southern High Plains, Texas.....	93	5,417	95	5,361
	Nonparticipants			
West-central Ohio.....	64	430	63	482
Northern Ohio.....	43	776	43	783
Southeastern Minnesota.....	55	453	56	470
Southwestern Minnesota.....	52	375	57	316
North-central Iowa.....	64	556	65	562
Southern Iowa.....	62	480	67	485
Southwestern Kansas.....	56	1,494	56	1,501
Southern High Plains, Texas.....	95	3,784	100	3,750

CHARACTERISTICS OF OPERATORS

Age of operator, amount of family labor available, off-farm income, and other characteristics of operators and their families were expected to have some relation to participation. Measures of several of these characteristics were obtained in the surveys. For most of them, however, participants and nonparticipants in the 1961 Feed Grain Program appeared to be very much alike. In some respects the results were the opposite of those anticipated. It was assumed, for example, that older farmers probably would want to reduce the size of their operations and therefore would be more likely to participate. But the data show that in seven of the eight areas, participants averaged 3 to 5 years younger than nonparticipants (table 7).

Another characteristic, related to age, is the number of years the farmer operated the farm he was on in 1961. In all areas except two, nonparticipants had occupied the farm longer than participants.

Most of the operators surveyed occupied a residence on the farm except in Kansas and Texas where from nearly a fourth to almost half of the operators lived off the farm. In both these areas the proportion of participants living on the farm was greater than that of nonparticipants.

The proportion of farms having family labor available, in addition to that of the operator, was about the same among participants and nonparticipants. Among the farms that had family labor, nonparticipants usually had slightly more. But the difference in the amount of family labor available was hardly large enough to have been a factor affecting the farmer's decision about participating in the feed grain program.

The proportion of families with off-farm income was slightly higher among participants than among nonparticipants. In 5 of the 8 areas, the percentage of participant families with off-farm income was from 3 to 16 percentage points higher than among nonparticipants in the same areas.

TABLE 7.--Characteristics of farm operators

Item	Unit	Ohio				Minnesota			
		West-central		Northern		Southeastern		Southwestern	
		P	NP	P	NP	P	NP	P	NP
<u>Characteristic</u>									
Years operator was on present farm....	Year	14.5	16.5	13.3	16.7	14.0	14.3	13.4	13.1
Operators living on farm.....	Percent	(²)	(²)	(²)	(²)	95	95	94	100
Age of operator....	Year	48	51	43	47	45	48	45	44
Families with off farm incomes...	Percent	69	69	73	68	47	47	38	28
<u>Family Labor</u>									
<u>Available</u>									
Operators reporting in--									
1960.....	Percent	52	51	71	68	97	100	94	98
1961.....	do.	53	53	71	68	96	100	94	100
Labor available per farm in--									
1960.....	Man-months	4.3	3.8	4.3	4.6	9.7	10.1	8.5	9.4
1961.....	do.	4.3	3.9	4.5	4.4	9.8	9.9	8.4	8.7
<u>Source of Off-Farm Incomes</u>									
Job or business....	Percent	57	55	60	53	38	29	26	24
Land rented out....	do.	5	1	3	2	4	0	1	0
Other investments..	do.	8	8	5	3	4	3	6	0
Pension, Social Security, etc....	do.	8	8	5	7	0	11	2	4
Oil leases.....	do.	--	--	--	2	--	--	--	--
Other.....	do.	0	5	11	8	7	8	6	0
<u>Off-Farm Income Per Family</u>									
None.....	do.	31	31	27	34	53	57	62	72
Less than \$2,500...	do.	29	31	36	22	31	29	23	26
\$2,500 to \$5,000...	do.	17	27	26	20	12	7	13	2
\$5,000 and over....	do.	23	11	11	24	4	7	2	0

¹ Percentage of operators on present farm 10 years or longer.² Data not available.

Note: P = Participants; NP = Nonparticipants.

and families, sample farms, 1961

Iowa				Southwestern Kansas		Southern High Plains, Texas	
North-central		Southern					
P	NP	P	NP	P	NP	P	NP
1 64	1 68	1 48	1 62	18.6	20.7	15.6	12.8
96	89	88	92	70	66	78	55
43	48	46	49	49	53	45	48
62	46	49	46	59	52	42	43
50	52	46	40	100	98	36	35
52	50	45	39	100	98	37	35
3.8	4.1	3.5	4.0	9.4	10.4	4.8	5.3
3.5	3.7	3.7	4.0	9.4	10.3	4.5	5.4
57	31	40	40	38	42	21	36
4	4	1	1	9	8	11	5
5	10	1	4	9	10	10	8
1	7	7	9	4	11	0	0
--	--	--	--	5	10	4	4
0	0	0	0	1	1	0	1
38	56	52	54	41	31	59	57
46	29	37	30	34	41	15	14
12	12	7	10	19	14	20	22
4	3	4	6	6	14	6	7

Differences in the amount of off-farm income were not as clear. For example, in west-central Ohio 23 percent of the participants had more than \$5,000 of income from off-farm sources compared with only 11 percent of the nonparticipants with incomes above \$5,000. But in northern Ohio the percentages were almost exactly opposite. Data were obtained in the class intervals shown in table 7. Therefore, it was impossible to compute average income for the groups which might have shown a more discernible pattern. Most of the off-farm income was from another job or business, and there was little difference between participants and nonparticipants in the sources of off-farm income.

Participation in Other Recent Farm Programs

Farmers who had participated in other farm programs were more likely to participate in the 1961 Feed Grain Program than those who had not. The Conservation Reserve Program offered farmers an opportunity to contract to retire cropland for periods of 3 to 10 years. Many of those contracts were still in effect in 1961. Relatively few farmers participated in this program compared with other recent programs (table 8). Of the 8 areas studied, only the area in Texas showed a relatively high participation in the CR program, and participation was

TABLE 8.--Participation of sample farms in other recent farm programs

Area	Farm program			
	Conservation Reserve 1956-60	Acreage Reserve 1956-58	Received ACP payments	
			1960	1961
	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>
West-central Ohio:				
Participants.....	3	15	16	26
Nonparticipants.....	8	15	12	14
Northern Ohio:				
Participants.....	3	29	37	33
Nonparticipants.....	0	7	20	22
Southeastern Minnesota:				
Participants.....	7	29	37	71
Nonparticipants.....	3	8	39	32
Southwestern Minnesota:				
Participants.....	3	27	14	32
Nonparticipants.....	0	7	2	11
North-central Iowa:				
Participants.....	9	45	1	77
Nonparticipants.....	0	14	7	6
Southern Iowa:				
Participants.....	11	42	17	62
Nonparticipants.....	7	37	22	24
Southwestern Kansas:				
Participants.....	11	49	20	12
Nonparticipants.....	6	25	14	10
Southern High Plains, Texas:				
Participants.....	16	11	29	47
Nonparticipants.....	26	12	21	33

higher among farmers not participating in the Feed Grain Program.

Participation in the acreage reserve program from 1956-58 was much higher than in the CR program. It permitted farmers to reduce acreage of specified crops for one year at a time for a stipulated payment. Participation in the AR program was higher among farmers who participated in the feed grain program than among those who did not.

The Agricultural Conservation Program encourages farmers to divert land from cultivated crops to conservation uses by paying part of the cost of establishing permanent vegetation. Participation in this program in 1960 was higher among farmers who later participated in the 1961 Feed Grain Program than among those who did not. Participants in the feed grain program were eligible for ACP payments on the diverted acres if they followed approved conservation practices. However, the size of ACP payments was limited by the number of farmers (participants and nonparticipants) who applied for them and funds available.

Thus, regardless of the voluntary program offered to farmers, there was a strong tendency for some farmers to participate in all programs and others not to participate in any. The data do not provide a clue, however, as to whether farmers participated or not because of personal likes or dislikes for Government programs, or because the programs, which were all of a similar nature, fitted some farms better than they did others.

FACTORS AFFECTING FARMERS' DECISION REGARDING PARTICIPATION

As shown in table 1, farms in the feed grain program, on the average, were much larger than those not in the program; they had a slightly larger proportion of the land in crops, and their feed grain bases were a larger proportion of total cropland. These factors point to the relatively greater importance of feed grain production on farms of participants than on those of nonparticipants. Because feed grain production was relatively more important, the price-support features of the feed grain program probably held more appeal for these farmers than for nonparticipants who usually had more livestock, and less grain to sell.

Other differences among farmers that might cause some to be more likely to participate than others are differences in productivity ratings, cash costs of production,

cash costs of conservation practices, and the part of conservation practices paid for by ACP payments.

Productivity Ratings

Three measures of productivity are shown in table 9. A "productivity rating" was assigned to each farm by the ASCS community committeemen; it was subject to review by the county committee. The "yield equivalent" is the 1959-60 county average yield of corn (or grain sorghum) adjusted by the farms' productivity ratings. The yield in 1961 was reported by the farmers at the time of the interview for this study.

In the Corn Belt, there was little difference in the average of productivity ratings assigned to participating and nonparticipating farms. In four of the six areas they averaged the same; in one area productivity averaged higher on the participating farms and in the other area higher on the nonparticipating farms.

In the two areas where grain sorghum is the major feed grain crop the "productivity ratings" were higher on participating farms than on nonparticipating farms. Part of the difference may be due to different proportions of dryland and irrigated sorghums on the two groups of farms. But comparisons of productivity ratings of dryland or irrigated sorghums show similar differences. These participating farms may have been slightly more productive. In the Kansas area, the nonparticipating farms contained larger acreages of grass, had more livestock, and often were located along the breaks.

In four of the six Corn Belt areas, the 1961 yields reported by the farmers averaged higher on the farms of participants than on those of nonparticipants. The higher yields reported by participants probably were due, in part, to selection of the better land for corn in 1961. (The effect of land selectivity is examined in a later section.)

A comparison of the yield equivalent with the 1961 yields shows that although 1961 yields were much above the estimated productivity of the farms, the ratio of 1961 yields to estimated normal yields averaged higher for the nonparticipants than for participants in three of the six Corn Belt areas.³ Thus, in these three areas despite participants' opportunity to select the better land for corn production in 1961, their

³ The definition of "normal yields" is found on page 1.

TABLE 9.--Productivity ratings of sample farms

Area	Average produc- tivity rating	Average yield equiva- lent	Average yield in 1961	Yield in 1961 as percentage of yield equivalent
	<u>Percent</u>	<u>Bushels</u>	<u>Bushels</u>	<u>Percent</u>
	<u>Corn</u>			
West-central Ohio:				
Participants.....	99	68.2	86.0	126
Nonparticipants.....	96	66.1	84.3	128
Northern Ohio:				
Participants.....	97	61.3	89.5	146
Nonparticipants.....	98	62.2	87.0	140
Southeastern Minnesota:				
Participants.....	100	61.5	81.1	132
Nonparticipants.....	100	61.6	79.1	128
Southwestern Minnesota:				
Participants.....	98	56.9	69.7	122
Nonparticipants.....	98	55.6	73.5	132
North-central Iowa:				
Participants.....	100	66.3	81.8	123
Nonparticipants.....	100	66.0	81.1	123
Southern Iowa:				
Participants.....	97	48.2	56.5	117
Nonparticipants.....	97	49.5	61.8	125
	<u>Grain sorghum</u>			
Southwestern Kansas:				
Participants.....	102	33.8	40.3	119
Dry land.....	83	26.0	31.9	123
Irrigated land.....	199	73.0	78.1	107
Nonparticipants.....	95	30.5	33.7	110
Dry land.....	83	25.7	28.4	111
Irrigated land.....	150	59.5	70.1	118
		<u>Cwt.</u>	<u>Cwt.</u>	
Southern High Plains, Texas:				
Participants.....	112	20.0	28.7	144
Dry land.....	89	13.7	22.5	164
Irrigated land.....	141	27.9	38.5	138
Nonparticipants.....	91	15.8	22.2	141
Dry land.....	82	12.8	17.2	134
Irrigated land.....	118	24.1	34.1	141

yields were not as high relative to their productivity ratings as on the farms of nonparticipants. One of two conclusions is indicated by this comparison. Either participants retired their better land, which isn't likely, or productivity ratings assigned to participants' farms were higher relative to the actual productivity compared with those assigned to nonparticipants' farms. The differences were small, but the relatively lower productivity ratings probably contributed to the decision of some farmers in the Corn Belt to stay out of the program.

In the two grain-sorghum areas, 1961 yields were slightly higher relative to productivity ratings on farms of participants than they were on farms of nonparticipants. Consequently, low productivity ratings probably were the cause of fewer farmers staying out of the program in these areas as compared with the Corn Belt. The proportion of farmers in the program, also, was higher in these areas than it was in the Corn Belt.

Cash Costs of Production

A factor that was assumed to have an effect on farmers' decisions regarding participating in the feed grain program was whether they were high-cost or low-cost producers--high-cost producers would be more likely to participate. Furthermore, because fixed costs would not be affected by participation, it was assumed that farmers' decisions would be based in part on the level of their cash costs and that reductions, if any, in the amount of unpaid labor would have little effect on decisions to participate unless farmers had profitable alternative uses for that labor.

Because of the detailed accounting necessary to estimate cash costs of production, most farmers probably have only a rough idea of actual costs. Nevertheless, they probably have opinions about the level of costs. Therefore, if a farmer thought his production costs were high, he would be more likely to participate.

To test his hypothesis, farmers were asked "What were your cash operating costs per acre (such as for seed, fertilizer, fuel, oil, hired labor, and insecticides) for corn (or grain sorghum) planted in 1961?" In all areas except southwestern Minnesota, estimated cost of participants averaged higher

than that of nonparticipants.⁴ The question as asked was not designed to estimate the level of costs with any degree of accuracy. Farm managers who are familiar with costs in the areas surveyed said the estimates were too high. But they do indicate what farmers thought their costs were, and this was assumed to be a factor in their decisions (table 10).

Conservation Practices and Costs on Diverted Acres

The kind of conservation practices to be used on the diverted acres were designated in broad terms by the National and State offices of ASCS, but practices approved for each county were specified by the county committees. In general, farmers in the Corn Belt were required to plant an annual or perennial grass or legume and to prevent noxious weeds from going to seed. No crop could be harvested from the diverted acres. In the Southern Plains areas summer fallowing was the most common conservation practice.

Whether the practices consisted of seeding a cover crop and weed control, or summer fallow, the farmers reported cash costs averaging about \$5 to \$8 an acre (table 10). As with the cash costs of producing corn, the range in costs was large, consequently these averages of the level of costs may not be wholly reliable.

In all areas studied except those in Ohio, a high proportion of the participants reported using one or more conservation practices on the diverted acres. In Ohio about 20 percent of the farmers reported that they did not use conservation practices (table 11).

Because several farmers reported using more than one conservation practice in some areas, the acreage covered by each practice is unknown. Although differences existed between the two areas in Ohio, data for these areas indicated that about as many farmers diverted land already seeded to a cover crop as diverted land that had been in a cultivated crop in 1960. In the other Corn Belt areas the data for these two kinds of conservation practices were not tabulated separately. In

⁴ The samples in southwestern Minnesota were drawn from a group of farmers who have a history of cooperation with the Minnesota Agricultural Experiment Station in a farm management research project and probably were better able to estimate their cash costs than farmers in other areas. Data from this area indicate that the real difference in cash costs between participants and nonparticipants probably was insignificant.

TABLE 10.--Cash costs of growing corn or grain sorghum and of conservation practices on diverted acres, sample farms, 1961

Area	Cash costs per acre reported for--			
	Corn		Conservation practices	
	Participants	Nonparticipants	Percentage of farmers reporting	Cost per acre for farms reported ¹
	<u>Dollars</u>	<u>Dollars</u>	<u>Percent</u>	<u>Dollars</u>
West-central Ohio.....	39.50	32.63	70	6.22
Northern Ohio.....	28.35	26.61	67	4.57
Southeastern Minnesota.....	23.43	20.82	100	5.98
Southwestern Minnesota.....	20.48	20.43	97	6.67
North-central Iowa.....	24.60	22.96	98	7.52
Southern Iowa.....	27.37	25.46	97	7.72
	Grain sorghum			
Southwestern Kansas:				
Dry land.....	7.34	6.93	97	7.77
Irrigated land.....	² 34.76	18.31	--	--
Southern High Plains, Texas				
Dry land.....	13.67	11.46	98	8.35
Irrigated land.....	21.84	18.74	--	--

¹ Excludes farms reporting no cost.

² The higher cost per acre on participating farms probably is not significant because of few reports, 2 of which reported relatively high costs.

TABLE 11.--Conservation practices on diverted acres, sample farms, 1961

Area	Conservation practice ¹					
	Seeded cover crop	Main-tained established cover crop	Fallowed	Stubble mulched	Other	None
	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>
West-central Ohio.....	53	37	2	1	3	21
Northern Ohio.....	29	51	30	0	0	17
Southeastern Minnesota.....	² 65	(2)	41	0	4	3
Southwestern Minnesota.....	² 82	(2)	36	0	0	4
North-central Iowa.....	² 96	(2)	0	0	0	4
Southern Iowa.....	² 96	(2)	0	0	0	4
Southwestern Kansas.....	5	4	83	8	0	4
Southern High Plains, Texas..	34	0	59	0	4	4

¹ Percentages may add to more than 100 because some farmers used more than one practice.

² Data for these 2 conservation practices not tabulated separately.

northern Ohio, in both areas in Minnesota, and in the Southern Plains, fallowing was a major conservation practice.

Farmers were reimbursed by ACP payments for part of the costs of conservation practices on diverted acres. These payments are available to farmers for establishing approved conservation practices on cropland. They have no direct relation to the feed grain program, but payments could be obtained for establishing conservation practices on diverted acres to the extent that funds were available. Participants in Minnesota, Iowa, and Texas especially took advantage of this as indicated by the sharp increase from 1960 to 1961 in the percentage of farmers receiving ACP payments (table 12).

ADAPTATION TO THE FEED GRAIN PROGRAM

In addition to using less cropland for feed production and possible changes in livestock numbers, farmers also had to decide on the fields to retire from production, whether to use more fertilizer, or to change other production practices.

Land Selection

It was assumed that farmers participating in the feed grain program would tend to keep their best land in corn and grain sorghum and to retire their poorest land. To what extent this was done and what effect

TABLE 12.--ACP payments to assist in defraying costs of conservation practices, sample farms, 1960 and 1961

Area	Participants			
	1960		1961	
	Percentage of farms reporting	Payment per farm reporting	Percentage of farms reporting	Payment per farm reporting
	<u>Percent</u>	<u>Dollars</u>	<u>Percent</u>	<u>Dollars</u>
West-central Ohio.....	16	304	26	179
Northern Ohio.....	37	253	33	324
Southeastern Minnesota.....	37	231	71	207
Southwestern Minnesota.....	14	47	32	50
North-central Iowa.....	1	38	77	70
Southern Iowa.....	17	121	62	132
Southwestern Kansas.....	20	353	12	441
Southern High Plains, Texas.....	29	556	47	707
	Nonparticipants			
West-central Ohio.....	12	213	14	271
Northern Ohio.....	22	374	20	373
Southeastern Minnesota.....	39	122	32	66
Southwestern Minnesota.....	2	100	11	56
North-central Iowa.....	7	280	6	223
Southern Iowa.....	22	168	24	184
Southwestern Kansas.....	14	547	10	629
Southern High Plains, Texas.....	21	244	33	283

it had on feed grain production were among the questions asked in the study.

The effect of land selection on feed grain production was estimated from information available on the quality of land used for feed grains in 1961 compared with the land used for these crops in 1960, and the quality of the land diverted.

Farmers interviewed were asked to estimate the normal yield of each field in corn or grain sorghum (corn in the Corn Belt and grain sorghum in the Southwest) in 1960 or 1961. Normal yield was defined as the yield farmers would expect with average weather and 1961 practices. From the acreages and yields of the fields, a normal yield for the farm was computed for each year.

A further assumption was that normal yields would be the same for 1960 and 1961 on nonparticipants' farms. However, the record high yields in 1961 apparently caused all farmers to estimate normal yields for 1961 to be above those for 1960.

The effect of land selection on 1961 yields can be approximated by first computing the ratio of 1961 normal yields to 1960 normal yields for participants and nonparticipants. The deviation from 1.0 (or 100 percent) on nonparticipants' farms is assumed to be the amount of bias due to weather and perhaps other factors. By subtracting this correction from the ratio of 1961 normal yields to those

of 1960 on participants' farms gives one measure of the effect on yields of land selection by participants.

In southeastern Minnesota, for example, participants estimated 1961 normal yields to be 9 percent higher than in 1960; nonparticipants in the same area estimated 1961 normal yields as 5 percent above those of 1960. The difference, 4 percent, indicates the amount 1961 yields on participants' farms in this area were raised because of land selection (table 13).

For the six areas for which data are available, the data indicate that land selection caused 1961 yields on participating farms to be 2 to 4 percent higher than they would have been without the feed grain program. As about half of all farmers who grew about 40 percent of the corn in 1961 participated in the program, land selection probably caused U.S. average yields in 1961 to be 1 to 2 percent higher than they would have been otherwise.

Another measure of the effect of land selection on yields is the difference between 1961 yields and farmers' estimates of the yields they would have expected on the diverted acreage if this land had been planted to corn or grain sorghum. Farmers estimated that yields on the diverted acres would have averaged 1 to 5 percent lower than the yields obtained in 1961 (table 14).

TABLE 13.--Normal yields of land used for feed grains, sample farms, 1960 and 1961¹

Area	Participants			Nonparticipants		
	1960	1961	1961 as a percentage of 1960	1960	1961	1961 as a percentage of 1960
	<u>Bushels</u>	<u>Bushels</u>	<u>Percent</u>	<u>Bushels</u>	<u>Bushels</u>	<u>Percent</u>
West-central Ohio.....	NA	89.0	--	NA	81.0	--
Northern Ohio.....	NA	89.6	--	NA	88.4	--
Southeastern Minnesota.....	77.4	84.6	109	79.1	82.9	105
Southwestern Minnesota.....	72.6	76.3	105	76.9	77.3	101
North-central Iowa.....	74.0	76.8	104	73.2	73.8	101
Southern Iowa.....	59.2	62.8	106	62.8	66.4	106
Southwestern Kansas: ²						
Irrigated.....	89.2	86.2	97	80.8	77.6	96
Nonirrigated.....	31.0	32.8	106	31.1	30.7	99
Southern High Plains, Texas ² .						
Irrigated.....	³ 43.9	³ 42.5	97	³ 43.2	³ 40.4	94
Nonirrigated.....	--	--	--	--	³ 24.8	--

¹ Normal yield is expected yield with 1961 practices and average weather on land planted to corn in 1960 and 1961, respectively. ² Grain sorghum, on fertilized land only. ³ Cwt.

TABLE 14.--Yields expected on diverted acres compared with actual yields, 1961

Area	Expected yield on diverted acres	Yields in 1961	Yield on diverted acres as a percentage of yields in 1961
	<u>Bushels</u>	<u>Bushels</u>	<u>Percent</u>
West-central Ohio.....	83.9	86.0	98
Northern Ohio.....	85.3	89.5	95
Southeastern Minnesota.....	78.2	81.1	96
Southwestern Minnesota.....	68.1	69.7	98
North-central Iowa.....	80.0	81.8	98
Southern Iowa.....	58.5	56.5	104
Southwestern Kansas.....	38.5	40.3	96
Southern High Plains, Texas..	28.5	28.7	99

This is roughly the same range of difference shown by the comparison of normal yields. But because the acreage diverted was smaller than the acreage planted, the data indicate that the effect of land selection on average yields for the United States in 1961 might have been even smaller than 1 to 2 percent indicated earlier. In response to the question on yields on diverted acres, many farmers said the yields would have been the same as those obtained on land planted to corn, or grain sorghum, in 1961. On many farms this probably was true, but no measure of possible bias is available.

Fertilizer Used on Corn

Trend in Fertilizer Use in the Corn Belt

In the seven chief corn-producing States--Ohio, Indiana, Illinois, Minnesota, Iowa, Missouri, and Nebraska--consumption of the three primary plant nutrients (N, available P_2O_5 , and K_2O) rose an average of 8 percent per year from 1956 to 1960 and 5 percent from 1960 to 1961. Consumption of nitrogen rose 17 percent per year from 1956 to 1960, and 21 percent from 1960 to 1961. Analysis of 1959 census data shows that 69 percent of the three primary nutrients and 79 percent of the nitrogen fertilizer used in these States were applied to corn.

The amount of fertilizer used on corn in each year from 1956 to 1961 can be estimated if we assume that the proportion of all fertilizer used on corn was the same in each of these years as it was in 1959. Similarly, we can also estimate the pounds of plant

nutrients applied per acre of corn harvested.

Although the change from 1960 to 1961 in total fertilizer applied to corn in the seven principal corn-producing States did not differ appreciably from the trend in other recent years, fertilizer applied per acre of corn rose sharply from 1960 to 1961. Total primary plant nutrients applied to corn rose from an estimated 63 pounds per acre in 1960 to 81 pounds in 1961. This was an increase of 18 pounds per acre compared with annual increases averaging less than 2 pounds from 1956 to 1960. Similarly, the amount of nitrogen applied per acre rose from an estimated 24 pounds in 1960 to 35 pounds in 1961--an increase of 11 pounds compared with an average about 2 pounds per year from 1956 to 1960.

Changes in Fertilizer Use on Participating and Nonparticipating Farms

On participating farms surveyed in December 1961 and January 1962 in two areas each in Ohio, Minnesota, and Iowa, the total quantity of the three primary plant nutrients applied on all corn generally was less in 1961 than in 1960, whereas on nonparticipating farms the total quantity used was greater in 1961 (table 15). In five of the six areas, participants reduced the total quantity of fertilizer used on corn; the decreases ranged from 4 percent in southwestern Minnesota to 44 percent in northern Ohio. Participants in north-central Iowa, however, used 21 percent more fertilizer on corn in 1961 than in 1960. In all six areas nonparticipants used more fertilizer on corn

in 1961; increases ranged from 9 percent in northern Ohio to 148 percent in southern Iowa.

Decreases in fertilizer used on all corn on participating farms resulted almost entirely from reductions in acres of corn per farm and, consequently, smaller acreages fertilized. Both participants and nonparticipants in all areas except one applied more fertilizer per acre in 1961 than in 1960. Only nonparticipants in north-central Iowa averaged less fertilizer per acre on corn in 1961 than in 1960, but among these farmers, the percentage of the acreage fertilized rose

27 percent. Farmers using fertilizer for the first time in 1961 probably applied it at a lower rate than those who had used it in previous years, thus reducing the average rate of application.

The amount of nitrogen used rose at a faster rate than the amount of all fertilizer used. On 5 of the 12 groups of farms surveyed (6 participant and 6 nonparticipant groups), the amount of nitrogen applied per acre rose 30 percent or more, compared with a maximum increase of 22 percent in total fertilizer used per acre.

TABLE 15.--Change in quantity of fertilizer used on corn and grain sorghum, sample farms, 1960 to 1961¹

Area	Acres per farm	Acres fertilized per farm	N applied per acre	Total plant food applied per acre	Total plant food per farm
	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>
West-central Ohio:					
Participants.....	-44	-43	40	18	-33
Nonparticipants.....	2	0	18	17	16
Northern Ohio:					
Participants.....	-50	-51	22	14	-44
Nonparticipants.....	2	3	11	6	9
Southeastern Minnesota:					
Participants.....	-43	-21	10	9	-14
Nonparticipants.....	7	38	43	12	55
Southwestern Minnesota:					
Participants.....	-30	-18	41	17	-4
Nonparticipants.....	-2	14	32	22	39
North-central Iowa:					
Participants.....	-25	8	17	12	21
Nonparticipants.....	2	27	-1	-10	14
Southern Iowa:					
Participants.....	-50	-29	-2	14	-20
Nonparticipants.....	20	107	42	20	148
Southwestern Kansas:					
Participants.....	-43	-8	-10	-11	-18
Nonparticipants.....	6	14	18	9	23
Southern High Plains, Texas:					
Participants.....	-41	2	4	4	7
Nonparticipants.....	7	71	-19	-19	38

¹ Corn in Ohio, Minnesota, and Iowa; grain sorghum in Kansas and Texas.

The question may be raised as to how representative are the farms and areas surveyed with respect to changes in fertilizer used. In both survey areas of Minnesota, changes from 1960 to 1961 in fertilizer used were close to the State average. In Ohio and Iowa, the changes in the survey areas bracketed the State averages (table 16). On the farms surveyed in the west-central area of Ohio, the quantity of fertilizer used on corn declined 9 percent and on the farms in the northern area 20 percent. Total fertilizer used in the State declined 14 percent. In Iowa increases averaged 13 percent for the State as a whole compared with 19 percent in the north-central area and 5 percent in the southern area.

In the Ohio areas, nearly all of the corn was fertilized in both 1960 and 1961. Consequently, changes in total plant food applied to corn reflected changes in acres of corn per farm and in rates of application. On participating farms in the west-central area, the acreage of corn dropped from an average of 71 acres per farm in 1960 to 40 acres in 1961 (table 17). Pounds of plant food applied per acre rose 18 percent, but the total quantity of plant food applied to corn declined 33 percent. On nonparticipating farms in the same area, acreage of corn remained about the same in 1961 as in 1960, plant food applied per acre rose about the

same as on the participating farms, but total plant food applied to corn rose about 16 percent.

Similar changes occurred among participating and nonparticipating farms in northern Ohio. In this area, however, participants used more plant food per acre in 1960 than did nonparticipants. Also the increase from 1960 to 1961 was greater on these farms.

In the two areas in Minnesota, about two-thirds of the corn was fertilized in 1960 (table 17). In both areas the proportion fertilized in 1961 was higher than in 1960, but it rose more in the southeast than in the southwest. The increase was about the same on the farms that were in the 1961 Feed Grain Program as on farms that were not.

Farmers interviewed in Iowa fertilized a smaller proportion of their corn acreage, and used less plant food per acre than those in Ohio and Minnesota. About half of the corn acreage in northern Iowa was fertilized in 1960; in the southern area about a fourth to a third of the acreage was fertilized.

In 1961, the proportion of the corn acreage fertilized was much higher than in 1960. Thus, in northern Iowa the acreage of corn fertilized on farms in the feed grain program was higher in 1961 than in 1960 despite a sharp reduction in total acreage of corn.

TABLE 16.--Change from 1960 to 1961 in quantity of primary plant nutrient used, selected survey areas

State and area	Unit	Primary plant nutrients used		
		1960	1961	Change from 1960 to 1961
				<u>Percent</u>
Ohio ¹	Ton	380,316	327,703	-14
West-central ²	Pound	6,287	5,731	-9
Northern ²	do.	6,183	4,967	-20
Minnesota ¹	Ton	236,685	255,510	8
Southeastern ²	Pound	4,407	4,756	8
Southwestern ²	do.	5,000	5,517	10
Iowa ¹	Ton	283,024	319,085	13
North-central ²	Pound	3,876	4,626	19
Southern ²	do.	1,277	1,338	5

¹ Total on all crops for years ending June 30.

² Estimated quantity applied to corn per farm from sample surveys.

TABLE 17.--Fertilizer used on corn, sample areas, 1960 and 1961

Item	Corn per farm	Corn fertilized per farm		Plant food used on corn				
		Acre- age	Per- centage of total	Per acre fertilized				Per farm
				N	Avail- able P ₂ O ₅	K ₂ O	Total	
	Acres	Acres	Percent	Pounds	Pounds	Pounds	Pounds	Pounds
West-central Ohio:								
Participants:								
1960.....	71.1	69.7	98	30.5	50.3	38.1	119	8,294
1961.....	39.9	39.9	100	42.6	56.2	41.3	140	5,586
Nonparticipants:								
1960.....	42.5	41.7	98	35.4	40.7	43.9	120	5,004
1961.....	43.4	41.6	96	41.8	51.7	46.3	140	5,824
Northern Ohio:								
Participants:								
1960.....	56.1	55.7	99	42.7	46.6	40.8	130	7,241
1961.....	27.9	27.3	98	52.2	48.7	47.4	148	4,040
Nonparticipants:								
1960.....	50.7	48.9	96	36.6	40.5	30.5	108	5,281
1961.....	51.7	50.5	98	40.7	42.1	31.5	114	5,757
Southeastern Minnesota:								
Participants:								
1960.....	87.8	57.9	66	31.6	36.7	32.9	101.2	5,859
1961.....	50.3	45.5	90	34.9	35.1	40.1	110.1	5,010
Nonparticipants:								
1960.....	52.8	35.0	66	17.8	33.0	30.6	81.4	2,849
1961.....	56.4	48.4	86	25.4	31.1	36.3	92.8	4,492
Southwestern Minnesota:								
Participants:								
1960.....	111.2	74.6	67	20.9	32.1	19.6	72.6	5,416
1961.....	77.8	61.5	79	29.4	34.6	20.7	84.7	5,209
Nonparticipants:								
1960.....	86.3	55.2	64	25.3	31.3	21.7	78.3	4,322
1961.....	84.3	63.1	75	33.3	36.3	25.8	95.4	6,020
North-central Iowa:								
Participants:								
1960.....	117.2	55.6	47	22.6	26.6	22.2	71.4	3,970
1961.....	87.8	60.2	69	26.5	28.5	24.7	79.7	4,798
Nonparticipants:								
1960.....	92.3	47.5	52	19.0	29.7	26.3	75.0	3,562
1961.....	94.0	60.1	64	18.8	26.7	21.9	67.4	4,051
Southern Iowa:								
Participants:								
1960.....	71.3	25.6	36	26.4	16.9	12.0	55.3	1,416
1961.....	35.9	18.1	50	26.0	23.9	13.0	62.9	1,138
Nonparticipants:								
1960.....	53.7	12.0	22	25.4	28.0	14.1	67.5	810
1961.....	64.7	24.8	38	36.1	30.3	14.5	80.9	2,006

The quantity of plant food used per acre of corn rose somewhat, although the increase was less than in other States. The combination of larger acreages fertilized and higher rates of application, however, caused total fertilizer used on corn to rise sharply except on participating farms in southern Iowa where acres fertilized per farm declined about a fourth.

Fertilizer Used on Grain Sorghum

Fertilizing grain sorghum varied widely between the two areas studied, and between dry land and irrigated land in each area. In both southwestern Kansas and the Southern High Plains of Texas, more of the grain sorghum on participants' farms was fertilized than on nonparticipants' farms, and more of the grain sorghum on irrigated land was fertilized than was true of that on dry land. Because of a reduction in acreage of grain sorghums grown in 1961, participants in southwestern Kansas used less fertilizer on sorghum in 1961 than in 1960, whereas nonparticipants in the same area used more (table 18). Very little dryland sorghum was fertilized in either 1960 or 1961.

The irrigated sorghum fertilized in 1960 ranged from about 30 percent of the acreage on farms of participants and nonparticipants in the Texas area to 84 percent on farms of participants in southwestern Kansas. Nonparticipants in southwestern Kansas fertilized only 36 percent of the irrigated sorghum in 1960.

In 1961, the percentage of the acreage fertilized and the quantity applied per acre were higher on both groups of farms in both areas than they were in 1960. Because of the decrease in the acreage of sorghum in 1961, participants in the Texas area used only about 6 percent more fertilizer on sorghum per farm than in 1960, and in southwestern Kansas they used about 18 percent less than in 1960.

Use of Other Improved Practices

In addition to changes in the use of fertilizer, many farmers indicated that in 1961 they either used for the first time or expanded the use of one or more improved practices on feed grains. The rate of adoption of new practices was about the same among participants and nonparticipants (table 19).

The more commonly reported practices adopted or expanded included using improved varieties of seed, increasing the plant population per acre, and using chemicals for weed and insect control. Between a fifth and a fourth of the corn producers in the two areas in Ohio reported that they used new and improved hybrid seed. In the Texas area where hybrid grain sorghum has largely replaced other varieties in the last 5 years, about a fourth of the participants and a third of the nonparticipants reported using improved sorghum hybrids for the first time in 1961. In northern Ohio, additional drainage facilities were reported by 13 percent of the participants and 10 percent of the nonparticipants. Other improved practices were reported by smaller percentages of the farmers interviewed, but these indicate the kind of new practices adopted or expanded and their relative importance.

Net Sales of Grain

The nature of the farms participating in the 1961 Feed Grain Program is further indicated by the net sales of grain. Net sales are defined as the corn, grain sorghum, barley, oats, and wheat (in the Corn Belt only) sold from the current year's crop or sealed as collateral for a Commodity Credit Corporation loan, less the quantity of grain bought during the feeding year beginning October 1.

Net sales of grain per farm from the 1960 crop averaged higher among participants than among nonparticipants in all of the 8 areas studied (table 20). The higher net sales by participants resulted from larger acreages of feed grains and fewer livestock per farm.

With the reduction in acreages of corn and grain sorghum in 1961, participants in all areas except the two in Minnesota sold or expect to sell less grain from the 1961 crop than they did from the 1960 crop, whereas nonparticipants in all areas sold or expect to sell more grain from the 1961 crop than they did from the 1960 crop. Despite the decrease in net sales by participants and larger net sales by nonparticipants in 1961 than in 1960, participants in five of the eight areas studied averaged larger sales than did nonparticipants in 1961.

TABLE 18.--Fertilizer used on grain sorghum, dry land and irrigated land, sample farms, southwestern Kansas and Southern High Plains, Texas, 1960 and 1961

Item	Sorghum per farm	Sorghum fertilized per farm		Plant food used on sorghum				
		Acreage	Per- centage of total	Per acre fertilized				Per farm
				N ¹	Avail- able P ₂ O ₅	K ₂ O	Total	
Southwestern Kansas:								
Participants:	<u>Acres</u>	<u>Acres</u>	<u>Percent</u>	<u>Pounds</u>	<u>Pounds</u>	<u>Pounds</u>	<u>Pounds</u>	<u>Pounds</u>
1960:								
Dry land.....	162.2	9.2	6	9.8	21.8	0	31.6	291
Irrigated land.	26.5	22.2	84	95.6	1.0	0	96.6	2,145
Total.....	188.7	31.4	17	70.5	7.1	0	77.6	2,436
1961:								
Dry land.....	91.6	13.1	14	21.9	10.3	0	32.2	422
Irrigated land.	16.8	15.8	94	97.6	1.5	0	99.1	1,566
Total.....	108.4	28.9	27	63.3	5.5	0	68.8	1,988
Nonparticipants:								
1960:								
Dry land.....	97.6	4.9	5	10.1	18.3	1.4	29.8	146
Irrigated land.	12.5	4.5	36	58.2	5.2	0	63.4	285
Total.....	110.1	9.4	9	33.1	12.0	.7	45.8	431
1961:								
Dry land.....	105.4	5.4	5	14.8	16.9	0	31.7	171
Irrigated land.	11.6	5.3	46	63.7	4.4	0	68.1	361
Total.....	117.0	10.7	9	39.0	10.7	0	49.7	532
Southern High Plains:								
Participants:								
1960:								
Dry land.....	127.1	2.0	2	73	0	0	73	146
Irrigated land.	92.8	27.2	29	76	0	0	76	2,067
Total.....	219.9	29.2	13	76	0	0	76	2,219
1961:								
Dry land.....	80.3	3.5	4	87	0	0	87	304
Irrigated land.	50.5	26.4	52	78	0	0	78	2,059
Total.....	130.8	29.9	23	79	0	0	79	2,362
Nonparticipants:								
1960:								
Dry land.....	103.0	0	0	0	0	0	0	0
Irrigated land.	40.2	12.4	31	91	0	0	91	1,128
Total.....	143.2	12.4	9	91	0	0	91	1,128
1961:								
Dry land.....	113.3	1.4	1	26	0	0	26	36
Irrigated land.	39.4	19.8	50	77	0	0	77	1,525
Total.....	152.7	21.2	14	74	0	0	74	1,569

¹ Fertilizer used in the Texas area was all nitrogen.

TABLE 19.--Percentage of farmers reporting yield-increasing practices on corn and grain sorghum used for the first time or expanded in 1961 sample farms¹

Area	Practice used					
	Improved variety of seed	Closer planting in rows	Closer spacing of rows	Spray for weed control	Treat for insect control	All others
West-central Ohio:	Percent	Percent	Percent	Percent	Percent	Percent
Participants.....	21	14	9	19	3	13
Nonparticipants.....	23	15	22	14	1	12
Northern Ohio:						
Participants.....	25	19	1	11	--	19
Nonparticipants.....	18	22	13	5	2	13
Southeastern Minnesota:						
Participants.....	8	10	3	19	4	19
Nonparticipants.....	13	5	8	20	4	12
Southwestern Minnesota:						
Participants.....	7	13	2	15	12	10
Nonparticipants.....	2	11	4	11	7	4
North-central Iowa:						
Participants.....	2	13	5	11	4	4
Nonparticipants.....	14	11	8	12	4	10
Southern Iowa:						
Participants.....	1	2	0	7	1	2
Nonparticipants.....	9	4	2	4	2	6
Southwestern Kansas:						
Participants.....	9	3	9	12	3	13
Nonparticipants.....	13	6	6	9	2	20
Southern High Plains, Texas:						
Participants.....	23	4	0	5	4	18
Nonparticipants.....	37	1	0	6	6	13

¹ Excluding the use of fertilizer.

TABLE 20.--Net sales of grain from the 1960 crop and quantity sold or to be sold from the 1961 crop, sample farms¹

Area	Year beginning Oct. 1, 1960				Year beginning Oct. 1, 1961			
	Sold	Sealed	Bought	Net sales	Sold	Sealed	Bought	Net sales
	<u>Bu.</u>	<u>Bu.</u>	<u>Bu.</u>	<u>Bu.</u>	<u>Bu.</u>	<u>Bu.</u>	<u>Bu.</u>	<u>Bu.</u>
	Participants							
West-central Ohio.....	3,516	296	168	3,644	2,740	219	196	2,763
Northern Ohio.....	3,742	268	117	3,893	3,171	246	42	3,375
Southeastern Minnesota.	1,116	629	547	1,198	917	1,131	491	1,557
Southwestern Minnesota.	1,585	1,428	368	2,645	1,152	2,323	449	3,026
North-central Iowa.....	1,716	3,633	840	4,509	1,404	3,362	731	4,035
Southern Iowa.....	540	400	439	501	397	296	572	121
Southwestern Kansas....	2,958	416	62	3,312	2,226	798	56	2,968
Southern High Plains, Texas.....	² 3,615	² 67	0	² 3,682	² 3,057	² 92	² 6	² 3,143
	Nonparticipants							
West-central Ohio.....	1,587	220	216	1,591	2,416	0	152	2,264
Northern Ohio.....	3,135	123	245	3,013	4,143	0	176	3,967
Southeastern Minnesota.	656	10	746	-80	966	0	317	649
Southwestern Minnesota.	1,522	0	623	899	1,758	0	608	1,150
North-central Iowa.....	1,395	370	1,579	186	1,988	0	1,539	449
Southern Iowa.....	500	151	843	-192	1,128	0	620	508
Southwestern Kansas....	1,436	0	711	725	1,818	0	602	1,216
Southern High Plains, Texas.....	² 2,304	² 64	² 20	² 2,348	² 3,582	0	² 13	² 3,569

¹ Net sales of grain includes corn, grain sorghum, barley, oats (and wheat in the Corn Belt) sold, or sealed for CCC loan less quantities bought during the feeding year beginning October 1.

² Hundredweight.

FARMERS' REASONS FOR PARTICIPATING

Farmers who participated in the program were asked "Why did you participate in the 1961 Feed Grain Program?" In each case the farmers's answer was summarized by the enumerator and recorded on the schedule. After several interviews, some of the enumerators obviously attempted to classify the replies. Further classification was done by the persons summarizing the data for each State. In the national office the answers were further reduced to those shown in table 21.

For many participants, their answers were indefinite and did not readily fit any of the groups finally used. For example, one enumerator reported that several farmers

participated in the program "because they did not need the feed." This could be interpreted to mean that the farmers thought it was more profitable to participate, or that they participated to reduce surpluses, or possibly some other basic reason. In table 25 these answers are included with those of farmers who thought it would be "more profitable" to participate. Other answers in this group include "to get a higher income," or "to get support price." In Kansas, apparently a reduction in costs was also interpreted as participating because farmers thought to do so was "more profitable." In Ohio, many farmers mentioned "labor shortage" as the reason for participating; these replies are included with those who participated to "reduce costs."

TABLE 21.--Percentage of farmers reporting major reasons for participating in the 1961 Feed Grain Program, 8 areas

Area	Reason for participating ¹									No reason given
	More profit-able	To im-prove the land	To reduce risk	To reduce costs	To reduce surplus	Needed advance payment	Unfavor-able weather	Required by landlord	Other	
	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>
West-central Ohio..	41	16	30	43	14	5	2	2	2	--
Northern Ohio.....	56	24	27	22	30	--	8	2	7	--
Southeastern Minnesota.....	30	46	25	36	52	21	16	--	5	5
Southwestern Minnesota.....	35	54	11	24	57	9	3	--	7	2
North-central Iowa ²	31	9	--	9	32	1	1	13	1	4
Southern Iowa ²	16	24	--	18	13	4	8	11	4	1
Southwestern Kansas	45	16	4	--	24	³ 36	--	17	25	--
Southern High Plains, Texas....	37	18	5	5	26	4	--	1	5	--

¹ Total replies add to more than 100 percent because some farmers gave more than one reason.

² Includes only the most important reason given by each farmer.

³ These farmers used the payment to pay expenses of summer fallowing.

Another major reason farmers participated was to improve the land. This was frequently reported as "to control weeds" or "to let the land rest."

Farmers who participated "to reduce risk" were largely in areas where production risks are relatively small. Therefore they probably were as much concerned about price risks as production risks, although the distinction was not clear.

A large proportion of the cooperating farmers did so to help reduce surpluses of feed grain. Many of them gave this reason only without reference to whether or not they thought it would be more profitable for them. For many farmers, participating in the program probably had little effect on their net farm income.

In a few areas, unfavorable weather at planting time, or the failure of other crops provided the major incentive for participation. In other areas landlords insisted on participation. But their reasons might well have been to get price support or to let the land rest.

The number of farmers participating to obtain the advance payment appeared to vary widely, but this also may have resulted from interpretation of answers. For example, the report for the Kansas area shows that 36 percent of the farmers reported participating "to get paid for summer fallow;" feed grain land was diverted to summer fallow that, in turn, was seeded to wheat or barley in the fall. This was interpreted as participating to get the advance payment.

Most of the reasons for diverting more than the minimum acreage required for participation were similar to those given for participation in the first place. In addition, on many farms the acreage retired exceeded the minimum requirement because farmers did not want to retire part of a field. Others retired more acres to reduce risk, or because they thought it was a good program to reduce feed grain surpluses.

Farmers who did not divert more than the minimum acreage most frequently reasoned that they either needed the feed, that they thought growing corn or grain sorghum was more profitable, or that they participated to be eligible for price support.

FARMERS' REASONS FOR NOT PARTICIPATING

Farmers who did not participate in the program were asked their reasons for not doing so. Enumerators were instructed not to suggest reasons but to record farmers'

answers as succinctly as possible. The seven most frequent reasons that were given are listed in table 22 and represent only a small percentage of the number of different answers obtained. Answers that indicated similar reasons were included with the specific answers in order to reduce the number in the "other" category.

An important reason given for not participating in all areas except Texas was that the farmers needed the feed. Nonparticipants usually had more livestock than did participants and had little surplus feed. Theoretically, these farmers could have sold their corn or grain sorghum to the CCC at the support price and bought other grain for feed at the (lower) market price. But the costs of storing and delivering grain to CCC, finding replacement grain for feed and hauling it to the farm, and the problem of having adequate storage for both CCC grain and grain for feed made this alternative less attractive. In addition, this method of operation would have been outside the management experience of many farmers as few, if any, of them indicated that they considered this alternative.

The reasons shown in table 22 are not as specific as they might appear to be at first glance. For example, many farmers are reported to have said that they didn't participate because their base acreages were too low. Often, additional comments on the schedule showed a wide range of meaning in this simple statement. Some said that the base acreage was too small to make participation worthwhile. Others said that their acreage in the base period was too low and they didn't want to reduce it any further. Still others implied that they had been treated unfairly by the county committee in setting the base acreage. A fourth interpretation shows that the base was too small to produce the amount of feed farmers needed. In Iowa, for example, a small base acreage was the most important reason for not participating, but in Minnesota similar statements apparently were interpreted as needing the feed. In the Texas area several farmers said they did not participate because their base acreages were too low. But additional comments frequently revealed that their base acreages were low in 1959 and 1960 either because of participation in the Conservation Reserve program or because land was shifted from sorghum to cotton to participate in the plan B cotton program that permitted farmers to increase their cotton acreage up to 140 percent of their allotments.

TABLE 22.--Percentage of farmers reporting major reasons for not participating in the 1961 Feed Grain Program, 8 areas

Area	Reason for not participating ¹								No reason given
	Needed the feed	More profitable to grow feed	Opposed to this or all Government programs	Base acreage too small	Payment too low	Land-lord objected	Didn't understand program	Other	
	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>
West-central Ohio.....	36	20	18	19	1	5	12	15	0
Northern Ohio.....	33	35	24	8	13	2	5	22	2
Southeastern Minnesota.....	68	31	18	9	13	3	11	16	0
Southwestern Minnesota.....	59	50	11	9	7	9	11	24	2
North-central Iowa.....	24	6	11	25	1	11	(²)	22	0
Southern Iowa.....	24	6	8	36	3	6	(²)	18	0
Southwestern Kansas.....	45	15	29	16	0	4	18	4	0
Southern High Plains, Texas...	0	15	26	35	19	3	4	8	8

¹ Total replies add to more than 100 percent because many farmers gave more than one reason.

² Not reported separately.

Similarly, farmers citing nonparticipation because "payments were too low" revealed a wide range of meanings. For example, many farmers thought that the productivity indexes that determined the level of payments were too low. Other farmers planned to sell little, if any, feed grain, therefore the support price was not considered in their decision, and the payment was too low to make participation as profitable as growing corn. Where this was clearly the reason, it was interpreted and recorded as "more profitable to grow feed."

The noneconomic reasons were much easier to interpret. These included objection in principle to the feed grain program specifically, or to all Government programs in general, farmers didn't understand the program, or that landlords objected to it.

The "other" reasons included statements to the effect that the program was unfair to small farmers, no suitable storage was available for grain for CCC loans, all or part of the farm was in the Conservation Reserve program, too much land would be fallow and subject to blowing, too much irrigated land would be idle, the farmer changed his mind at time of compliance because the crop looked too good to plow under, the program came too late, and not interested because farming was only a hobby.

ADVANTAGES AND DISADVANTAGES OF THE FEED GRAIN PROGRAM

As was expected, participants and non-participants differed in their appraisals of the advantages and disadvantages of the feed grain program. Also, farmers in the Corn Belt differed from those in the Southern Plains in their appraisals of the program.

The three advantages of the program that stood out clearly in all areas were that (1) it reduced surplus, (2) it gave farmers an opportunity to improve or conserve their soil by better weed control, seeding soil-building crops, or other soil improvement practices, and (3) it provided price support for a major crop (table 23). Generally, a high percentage of both participants and nonparticipants mentioned these advantages, but the percentage of participants mentioning them usually was a little higher.

In Minnesota a high percentage of farmers observed that the program gave participants an assured income, reduced labor requirements and offered the possibility of higher prices for livestock and livestock products.

In the Southern Plains areas, a large proportion of the farmers saw no particular merit in the Feed Grain Program. This was true of participants as well as nonparticipants. About a third of the participants in southwestern Kansas, and a fifth of those in the Texas area, saw no advantage in the feed grain program as it operated in 1961.

The disadvantages of the program that were mentioned were more difficult to catalogue. The differences among States in percentage of farmers reporting each class of disadvantage perhaps reflects the interpretation placed on the farmers' answer by the persons summarizing the data for each State as much as it does the answer itself. What was reported as "inequitable administration" in Minnesota may have been reported more specifically as dissatisfaction with the crop history as the basis for permitted acres in Iowa, or more generally as "too much Government control" in Kansas (table 24).

In most areas, farmers reported that the program was unfair to livestock farmers and small farmers. This was to be expected after noting that participants had fewer livestock and a larger acreage in crops than nonparticipants.

Another criticism of the program was that it was ineffective because participants tended to farm the permitted acreage more intensively and thus raised yields. Others merely said the program was ineffective in reducing surplus, but few mentioned that it was ineffective, in part, because reductions by participants were offset by increases in production by nonparticipants.

In the Southern Plains areas, much of the criticism of the program centered around the use of the diverted acres. With a one-year program, fallowing or leaving the land idle were the only practical uses of the diverted acres. A seeding of grass could not be established in one year. Fallowing left the land exposed to blowing and was costly relative to the payments received. Leaving the land idle also left it exposed to blowing. Weeds growing on idle land frequently included Russian thistles that blew onto neighboring farms and carried noxious weed seeds with them. In the southwestern Kansas area, much of the land was fallowed prior to 1961; fallowing in this area had increased some in recent years with successive reductions in wheat acreages under the wheat allotment program. Thus, more land was fallowed than could be seeded to wheat or barley in the fall, and the land was exposed during the spring windstorms.

TABLE 23.--Advantages of the Feed Grain Program as reported by operators, sample farms, 1961

Advantage	West-central Ohio		Northern Ohio		South-eastern Minnesota		South-western Minnesota		North-central Iowa		Southern Iowa		South-western Kansas		Southern High Plains, Texas	
	P	NP	P	NP	P	NP	P	NP	P	NP	P	NP	P	NP	P	NP
	<u>Pct.</u>	<u>Pct.</u>	<u>Pct.</u>	<u>Pct.</u>	<u>Pct.</u>	<u>Pct.</u>	<u>Pct.</u>	<u>Pct.</u>	<u>Pct.</u>	<u>Pct.</u>	<u>Pct.</u>	<u>Pct.</u>	<u>Pct.</u>	<u>Pct.</u>	<u>Pct.</u>	<u>Pct.</u>
Reduced (or controls) surplus.....	23	15	30	13	59	49	68	61	46	26	43	31	34	18	26	11
Improved or conserved soil.....	19	0	17	15	47	26	68	37	27	10	28	12	25	2	37	5
Supports price of grain	9	1	14	5	3	4	16	9	34	25	22	13	13	6	22	12
Assured income.....	12	2	13	5	34	8	15	7	--	--	7	2	--	--	--	--
Higher income.....	8	3	11	3	--	--	--	--	4	1	2	3	14	10	2	3
Reduced cost.....	16	1	8	0	3	4	9	--	9	3	1	6	--	--	--	--
Reduced labor load.....	29	12	19	12	18	16	12	7					--	--	--	--
Raises price of live-stock.....	--	--	--	--	25	8	18	13	--	--	--	--	--	--	--	--
Advance payment.....	3	0	6	0	--	--	--	--	--	--	--	--	11	2	--	--
Other.....	7	15	12	2	8	23	18	19	5	7	6	2	9	1	8	12
No advantage.....	23	38	14	38	5	19	4	17	11	29	8	28	32	61	20	58
No reply or no opinion.	1	16	0	18	1	4	2	4	1	10	9	12	0	12	2	3

Note: P = Participant; NP = Nonparticipant.

TABLE 24.--Disadvantages of the Feed Grain Program, sample farms, 1961

Disadvantage	West central Ohio		Northern Ohio		South- eastern Minnesota		South- western Minnesota		North- central Iowa		Southern Iowa		South- western Kansas		Southern High Plains, Texas	
	P	NP	P	NP	P	NP	P	NP	P	NP	P	NP	P	NP	P	NP
	<u>Pct.</u>	<u>Pct.</u>	<u>Pct.</u>	<u>Pct.</u>	<u>Pct.</u>	<u>Pct.</u>	<u>Pct.</u>	<u>Pct.</u>	<u>Pct.</u>	<u>Pct.</u>	<u>Pct.</u>	<u>Pct.</u>	<u>Pct.</u>	<u>Pct.</u>	<u>Pct.</u>	<u>Pct.</u>
Payments too low.....	3	3	3	8	20	9	20	23	6	3	6	3	17	12	6	8
Inequitable adminis- tration.....	3	8	14	5	18	16	23	15	--	--	--	--	--	--	14	18
Crop history method is inequitable.....	0	1	3	2	--	--	--	--	24	28	8	13	--	--	--	--
Unfavorable to live- stock farmers.....	3	7	0	17	14	37	10	24	9	7	10	9	21	19	1	--
Unfavorable to small farmers.....	6	12	0	5	5	25	12	22	1	17	12	16	3	8	--	--
Ineffective--raised yields.....	9	3	16	5	47	53	32	37	9	8	10	12	7	2	4	4
Too costly.....	6	5	6	5	8	11	8	17	5	3	5	9	5	6	5	5
Too much Government control.....	8	9	5	10	10	29	23	38	6	8	5	9	32	35	2	5
Did not raise farm income.....	3	4	3	2	--	--	--	--	4	8	6	16	--	--	--	--
Too complicated.....	5	3	3	0	--	--	--	--	--	--	--	--	16	11	--	--
Leaves too much fallow.	--	--	--	--	--	--	--	--	--	--	--	--	5	4	--	--
High cost of diversion.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9	4
Disrupts rotation.....	19	8	17	8	--	--	--	--	--	--	--	--	--	--	--	--
Other.....	26	27	29	22	11	8	28	6	25	18	16	9	28	21	19	37
No disadvantage.....	22	16	14	23	13	7	12	0	30	24	34	21	8	18	42	19
No answer.....	1	4	3	10	3	3	2	4	0	0	0	0	--	--	1	3

Note: P = Participant; NP = Nonparticipant.

Some of the "other" disadvantages of the program are related to the more specific answers. For example, several farmers objected to the program because not enough of the grain grown on the permitted acres was eligible for price support. This might reflect (1) 1961 may have been an unusually good year for the farmer, or (2) the productivity index for the farm, and therefore the payment for diversion was too low.

HOW TO IMPROVE THE PROGRAM

In addition to questions designed to measure farmers' adjustment to the 1961 program, and their opinions regarding its advantages or disadvantages, farmers were asked to indicate how they would respond to changes in the program. These suggested changes were (1) those that would increase participation, and (2) those that would reduce the cost of the program.

Changes to Increase Participation

Farmers who did not plan to participate in 1962 were asked how they would respond to each of the following suggested changes in the program that would be expected to increase participation: (1) Require participation in the feed grain program as a requirement for price support on soybeans; (2) offer a choice of a long-term program or the 1-year program; (3) raise payments for diverting land from feed grain to conservation uses; (4) raise support prices of feed grain by 12.5 percent (based on an increase from \$1.20 a bushel for corn to \$1.35); (5) lower the minimum acres to be diverted from 20 percent to 15 percent; (6) permit farmers to pasture diverted acres. The first two of these changes presumably would not add to the cost of the program per unit of feed reduction or result in feed production above that anticipated for 1962. The other four probably would raise costs of the program or be less effective in reducing feed production, or do both.

About three-fourths of all the farmers interviewed in north-central Iowa who planned to grow soybeans in 1962 and did not plan to participate in the feed grain program said they would participate if this were required to obtain the support price of \$2.30 for 1962 soybeans (table 25). The same answer was given by about two-fifths of the comparable groups of farmers in southwestern Minnesota, a fifth of those in

southeastern Minnesota and west-central Ohio, and a tenth of those in northern Ohio. The only farmers who showed almost no interest in this proposal were those in northern Ohio who did not participate in the 1961 program--only 5 percent said they would participate in the feed grain program to be eligible for support prices on soybeans at \$2.30 a bushel. The number who said they would participate dropped sharply as the suggested support price was reduced to \$2.15, \$2.00, and \$1.85 a bushel.

Farmers who did not participate in the 1961 program showed relatively more interest in a long-term (5-year) program than did farmers who participated in 1961. In the 8 areas, from 2 to 11 percent of the farmers who did not participate in 1961 planned to participate in the 1962 program; from 10 to 38 percent of these farmers would participate in a 5-year program if it were offered (table 26). In most areas, farmers who participated in the 1961 program preferred the 1-year program.

A relatively large proportion of farmers not planning to participate in 1962, indicated that they would participate if payments for land retirement were raised above the rates that they earned or could have earned in 1961 (table 27). This does not necessarily mean that they thought the general level of payments was too low in 1961. It may indicate that they thought the productivity indexes for their farms were too low relative to those on neighboring farms. In west-central Ohio, a third of the 1961 participants who did not plan to participate in 1962 said they would do so if their payments for diverted acreage were raised 10 percent. Similarly, 50 percent of such farmers in north-central Iowa and 40 percent in southeastern Minnesota would participate under these circumstances. Considerably larger proportions said they would participate if payments were raised 20 or 30 percent. Smaller proportions of the farmers who were non-participants in 1961 said they would participate in 1962 if diversion payments were raised.

Many farmers who were not planning to participate in the 1962 program said they would participate if the support prices were raised 12.5 percent (table 27). Farmers who were in the program in 1961 were more willing to change plans for a higher support price than were those not participating in 1961. Similarly, the proportion who would participate if the minimum feed-grain acreage to be diverted to conservation uses were reduced from 20 percent to 15 percent was

TABLE 25.--Proportion of farmers not planning to participate in the feed grain program in 1962 who would participate if such participation were required to obtain support prices for soybeans at specified levels

Item	Farmers not planning to participate in 1962			Farmers planning to grow soybeans in 1962 who would participate in the program to get price support on soybeans at--			
	Number in sample	Farmers who plan to grow soybeans in 1962		\$2.30 per bushel	\$2.15 per bushel	\$2.00 per bushel	\$1.85 per bushel
	No.	Pct.	No.	Pct.	Pct.	Pct.	Pct.
Participants in 1961:							
West-central Ohio.....	35	61	21	31	6	0	0
Northern Ohio.....	30	92	28	19	9	5	5
Southeastern Minnesota...	26	50	13	12	12	12	12
Southwestern Minnesota...	21	88	18	33	13	7	6
North-central Iowa.....	5	80	4	75	75	50	25
Southern Iowa.....	15	40	6	33	17	17	17
Nonparticipants in 1961:							
West-central Ohio.....	68	52	35	26	21	11	3
Northern Ohio.....	59	73	43	5	0	0	0
Southeastern Minnesota...	74	60	44	24	20	10	0
Southwestern Minnesota...	43	76	33	47	31	3	3
North-central Iowa.....	54	52	28	79	50	43	36
Southern Iowa.....	45	31	14	57	21	21	14

TABLE 26.--Percentage of farmers in sample who would participate in a 5-year program with option of annual sign-up compared with percentage planning to participate in the 1962 program

Area	Participants in 1961 who--		Nonparticipants in 1961 who--	
	Will participate in 1962	Would participate in a 5-year program	Will participate in 1962	Would participate in a 5-year program
	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>
West-central Ohio.....	64	61	4	14
Northern Ohio.....	63	53	4	10
Southeastern Minnesota.....	81	81	2	26
Southwestern Minnesota.....	81	76	10	21
North-central Iowa.....	93	84	11	26
Southern Iowa.....	75	80	10	38
Southwestern Kansas.....	55	54	7	10
Southern High Plains, Texas.....	82	73	10	26

TABLE 27.--Percentage of farmers not planning to participate in the feed grain program in 1962 who would participate provided the program had specified changes

Item	Number in sample	Percentage of farmers who would participate if payments for participation were higher than in 1961 by--			Farmers who would participate if--		
		10 percent	20 percent	30 percent	Feed-grain support prices were 12.5 percent higher than in 1961	Minimum acreage to be diverted were reduced to 15 percent	They had permission to pasture diverted land
	<u>Number</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>
Participants in 1961:							
West-central Ohio.....	35	33	58	71	50	15	33
Northern Ohio.....	30	10	47	71	9	5	29
Southeastern Minnesota.....	26	40	75	90	65	37	75
Southwestern Minnesota.....	21	27	71	87	47	50	35
North-central Iowa.....	11	50	75	75	75	44	67
Southern Iowa.....	24	23	50	73	13	22	57
Southwestern Kansas ¹	25	4	20	32	24	12	20
Southern High Plains, Texas..	34	23	55	82	62	55	35
Nonparticipants in 1961:							
West-central Ohio.....	68	12	20	34	11	9	36
Northern Ohio.....	59	18	42	57	20	8	31
Southeastern Minnesota.....	74	10	31	44	25	16	36
Southwestern Minnesota.....	43	18	47	68	30	32	50
North-central Iowa.....	61	20	37	53	37	26	33
Southern Iowa.....	59	21	37	61	19	16	56
Southwestern Kansas ¹	70	2	9	19	19	10	19
Southern High Plains, Texas..	66	4	18	38	31	20	22

¹ Excludes farmers who were uncertain about participation in 1962.

greater among farmers who were in the program in 1961. Permission to pasture the diverted acreage with no reduction in payments appeared to be attractive to more farmers than either higher support prices or a reduction in the minimum acreage to be diverted.

Changes to Reduce Program Cost

Farmers who planned to participate in the 1962 program were asked if they would participate if payments for diverting feed-grain acreage to conservation uses were reduced. The proportion of farmers who said they would participate if payments were reduced 10 percent ranged from 54 percent in north-central Iowa to 16 percent in southern Iowa

and southwestern Kansas (table 28). Few said they would participate if payments were 20 or 30 percent lower.

Most farmers did not plan to divert the same land in 1962 as in 1961. According to the survey, the proportion of farmers diverting the same land in both years will range from 10 percent in southwestern Kansas to 39 percent in northern Ohio. The large proportion of farmers who will rotate the fields to be retired in 1962, coupled with the fact that many farmers said they participated in the program to improve the soil of the fields that were retired, suggests that a succession of one-year feed grain programs will tend to raise yields and require further reductions in acreages if the efforts to restrict production are not to be offset by rising yields.

TABLE 28.--Percentage of 1961 participants who would participate in the 1962 Feed Grain Program if payments for diverting land to conservation uses were reduced and who will divert the same land in 1962 as in 1961

Area	Percentage of farmers who would participate in 1962 and acreage per farm that would be diverted if payments were lower than in 1961 by--						Farmers who will divert same land in 1962 as in 1961
	10 percent		20 percent		30 percent		
	Farmers	Diverted land per farm	Farmers	Diverted land per farm	Farmers	Diverted land per farm	
	<u>Percent</u>	<u>Acres</u>	<u>Percent</u>	<u>Acres</u>	<u>Percent</u>	<u>Acres</u>	<u>Percent</u>
West-central Ohio	26	16	6	42	2	18	34
Northern Ohio....	22	21	10	15	3	7	39
Southeastern Minnesota.....	27	35	9	52	3	21	31
Southwestern Minnesota.....	32	27	3	53	2	52	34
North-central Iowa.....	54	29	14	27	7	34	14
Southern Iowa....	16	28	0	--	0	--	30
Southwestern Kansas.....	16	53	8	36	8	36	10
Southern High Plains, Tex....	33	48	6	120	2	120	32